

REMARKS/ARGUMENTS

The amendments to the claims and the newly added claims are supported by the original claims and the specification:

- Claim 1: Example 7 in Table 1-1;
- Claim 21: original claim 1 and Example 3 in Table 1-1;
- Claim 22: Comparative Example 6.

No new matter has been added.

MPEP § 2173.05(i) states: "If alternative elements are positively recited in the specification, they may be explicitly excluded in the claims." ZnDTP is an explicitly listed as a candidate in the composition of Comparative Example 6. Thus, this amendment is fully supported by the filed specification.

Related art rejection

1. The rejection of claims 1-4, 6, 9, 10, 19 and 20 under 35 USC § 103(a) in view of US 2003/0153472 ("*Nagano*") and US 5,198,129 ("*Hata*") is respectfully traversed.

One aspect of the invention is "to provide a lubricating oil composition for sizing which is excellent in machinability and degreasing efficiency..." See [0005] of the filed specification. These results are achieved by including (at least) components (B) and (C) in the oils as claimed. The Office concedes at page 3 of the Office Action that *Nagano* contains no disclosure of the phosphite esters of the present claims. The Office considers that component (E) of *Hata* qualifies as component (C) of the present claims.

Firstly, the Office alleges that the benzotriazole of *Nagano* (see *e.g.* [0029] & Table 3) is a metal deactivator and present in an amount of 0.03 wt%. Without conceding that the

benzotriazole of *Nagano* qualifies as an extreme pressure agent, claim 1 has been amended as follows: "(C) at least one metal deactivator in an amount of ~~0.01~~ 0.05 to 5 % by mass..."

Thus, the point of *Nagano* is not encompassed by the range as claimed.

Secondly, *Hata* states the following in regard to amounts of component (E)—the component allegedly analogous to component (C) of the present claims:

The component (E), i.e. the additive compound is present in the lubricating oil composition of the present invention preferably at a concentration of from 0.01 to 5.0% by weight, more preferably from 0.1 to 1.5% by weight, furthermore preferably from 0.2 to 1.0% by weight.

See column 5, lines 7-12 of *Hata*. The trajectory of *Hata* is towards a preferred range of 0.2 to 1.0% by weight, while preferably the range in the present claims is: "2.0 to 10 % by mass" which is opposite to the *Hata* trajectory. See claim 21. Especially combined with the amendment to claim 1, compositions having from 0.05 to 5 % by mass of metal deactivator AND from 2.0 to 10 % by mass of the acid phosphite ester would not have been obvious to one of ordinary skill in the art given the teachings of the cited references in regard to the ranges, taken as a whole.

Examples 1-3 and Comparative Example 1 reported in Table 1-1 of the present specification each have the same components for (A)–(C), except that Comparative Example includes the metal deactivator C1 in an amount that falls outside the range as claimed. The oil of this comparative example had a much smaller amount of residual oil than the oils of Examples 1-3, and thus the oil of Comparative Example 1 performed poorly in the degreasing test. Compositions having components of the present claims in amounts required by the present claims are "excellent in machinability and degreasing efficiency" (*inter alia*), while the same cannot be said for, *e.g.*, a composition falling outside the claims.

The degreasing test is described in [0035] of the filed specification:

(b) Degreasing test

A sintered metal impregnated with the oil was subjected to extraction with n-hexane. The residual amount of the oil in the sintered metal after the extraction was measured.

One further object of the present invention is "to provide a lubricating oil composition for sizing ... which is excellent in compatibility with an impregnated oil and a sintered metal used in oil impregnated bearings." See [0005] of the filed specification.

Applicant has shown that lubricating oils containing ZnDTP shows poor compatibility with an impregnated oil and a sintered metal. Particularly, the composition of Comparative Example 6 includes ZnDTP, and this composition was incompatible with an impregnated oil (precipitates formed) and the sintered metal (color change). The pertinent part of Table 1 reporting such performance is reproduced below from US 2007/0149416, the publication of the present application, with box added:

| | | | Comp. Ex. 1 | Comp. Ex. 2 | Comp. Ex. 3 | Comp. Ex. 4 | Comp. Ex. 5 | Comp. Ex. 6 |
|--------------------------|---------------------------------------------|--------------------------------------|----------------|------------------|--------------------------|----------------|--------------------|--------------------|
| Amount (% by mass) | Base oil | A1 | 99.945 | 84 | 90 | | 94.9 | 94.9 |
| | | A2 | | | | | | |
| | | A3 | | | | | | |
| | | A4 | | | | | | |
| | | A5 | | | | 96.9 | | |
| | Extreme pressure agent | B1 | 0.05 | 15 | 4 | 3 | | |
| | | B2 | | | | | | |
| | | B3 | | | | | 5 | |
| | | B4 | | | | | | 5 |
| | Metal deactivator | C1 | 0.005 | 1 | | 0.1 | 0.1 | |
| | | C2 | | | 6 | | | 0.1 |
| | | C3 | | | | | | |
| Lubricity | JASO pendulum Test | Coefficient of friction | 0.135 | 0.093 | 0.107 | 0.101 | 0.142 | 0.11 |
| Degreasing efficiency | Degreasing Test | Residual amount of Oil (g) | 0.0003 | 0.0128 | 0.116 | 0.172 | 0.0198 | 0.0015 |
| Compati- bility | Compatibility with impreg- nation oil | Precipitates | none | none | form | none | form | form |
| | Compatibility with sintered metal | Color change Appearance of oil | none good | none discolor | none Preci- pitate | none good | change discolor | change discolor |

The definitions for the compatibilities discussed above are provided in the specification:

(c) Compatibility test with an oil for impregnation

An impregnation oil and the sizing oil was mixed in a 1:1 (mass ratio) proportion and the mixture was stored for one month. Presence or absence of precipitates was checked to evaluate stability of the mixture with the impregnation oil.

(d) Compatibility test with a sintered metal

A sintered metal was immersed in the sizing oil and stored at room temperature for one month. The presence or absence of color change, appearance of the oil, and presence or absence of precipitates were evaluated.

See [0035] of the specification as filed.

The Office concedes that *Nagano* contains no disclosure of component (C) of the present claims but relies on component (E) of *Hata* for this component. However, *Hata* also requires the presence of ZnDTP in the oils disclosed therein:

The above-described component (B), i.e. the zinc dithiophosphate is present in the lubricating oil composition of the present invention at a concentration of from 0.05 to 5.0% by weight, preferably from 0.1 to 3.0% by weight.

See column 3, lines 36-40. At column 2, line 67, emphasis added. *Hata* gives the acronym for zinc dithiophosphate: "The zinc dithiophosphate (ZnDTP)..."

Therefore, *Hata* provides no reasonable expectation of success that oils as claimed would be "excellent in compatibility with an impregnated oil and a sintered metal used in oil impregnated bearings" (*supra*), because the presence of ZnDTP has been shown to produce lubricating oils that do not exhibit such excellent compatability. Moreover, MPEP § 2141.02(VI) states: "A prior art reference must be considered in its entirety, i.e., as a whole, including portions that would lead away from the claimed invention." One of ordinary skill in the art would not consult *Hata* because the whole of *Hata* means that ZnDTP is required to

be present in the oils. Thus is it improper to grab only the component (E) from *Hata* without considering *Hata*'s teaching that ZnDTP must be present.

Withdrawal of the rejection is respectfully requested.

2. The rejection of claims 11-17 under 35 USC § 103(a) in view of *Nagano*, *Hata*, and US 2002/0114980 ("*Gunsel*") is respectfully traversed for the same reasons given above—*Gunsel* does not remedy the problems from the combination of *Hata* and *Nagano*, discussed above.

Withdrawal of the rejection is respectfully requested.

3. The rejection of claims 15-17 under 35 USC § 103(a) in view of *Nagano*, *Hata*, and US 5,275,630 ("*Dorer*") and US 5,484,542 ("*Cahoon*") is respectfully traversed for the same reasons given above—neither of *Dorer* and *Cahoon* remedy the problems from the combination of *Hata* and *Nagano*, discussed above.

Withdrawal of the rejection is respectfully requested.

4. The rejection of claim 18 under 35 USC § 103(a) in view of *Nagano*, *Hata*, and US 6,586,376 ("*Nakanishi*") is respectfully traversed for the same reasons given above—*Nakanishi* does not remedy the problems from the combination of *Hata* and *Nagano*, discussed above.

Accordingly, the rejection is no longer tenable and should be withdrawn.

Conclusion

Applicants respectfully submit that the above-identified application is in condition for allowance. Notification thereof is requested.

Respectfully submitted,

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A handwritten signature in black ink, appearing to read 'Ben Vastine', is written over the printed name.

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